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Perceptual Representations and Verb Aspect

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The Representation of Event Descriptions

This project investigates the role of verb aspect on the perceptual representation of event descriptions. An embodied perspective of language comprehension predicts that comprehenders activate a simulation of the described event, including features of the event and the instruments that are used during the event. Because the representation is a simulation of the event, pictures of instruments in use (open umbrella, uncapped pen) should better match readers' representations than pictures of instruments not in use (closed umbrella, capped pen).

It is further hypothesized that this effect may be stronger when events are described as ongoing (the imperfective aspect) rather than completed (the perfective aspect). According to Ter Meulen's (1995) theory of representing time in natural language, the perfective aspect (*He put the letter in the mailbox.*) does not allow access to the internal structure of an event, but rather treats the event as a closed unit. Alternatively, the imperfective aspect (*He was putting the letter in the mailbox.*) allows access to the internal structure of an ongoing event. Previous investigations have verified that comprehenders are more likely to represent an event as in progress after reading an imperfective sentence (was putting) than a perfective sentence (put). Likewise, readers are more likely to represent an event as completed after reading a perfective rather than an imperfective sentence (Madden & Zwaan, 2003).

Experiment 1

Pictures of instruments in use (open mailbox) are expected to better match readers' simulations of event descriptions than pictures of instruments not in use (closed mailbox). Furthermore, because the imperfective aspect allows access to the internal structure of an event, whereas the perfective aspect treats the event as a closed unit, it is possible that the imperfective event descriptions might show a stronger benefit for in-use over not in-use instruments than the perfective event descriptions. Participants in the first experiment were indeed faster to verify that sentences were related to preceding pictures of instruments when the instruments were depicted as in use rather than not in use. However, contrary to the prediction regarding verb aspect, this finding was only observed for the perfective sentences.

Experiments 2 and 3

It was hypothesized that this unexpected finding might be due to the fact that readers use the imperfective aspect as a cue to "background" the described event in preparation to shift attention to another co-occurring event (*He was putting a letter in the mailbox when his wife drove up the driveway.*). In this case, the activated representation may include an in-use instrument (open mailbox) while the event description is being read, but this imperfective event may be interpreted merely as a setting for future events. Quickly attention would be refocused away from this representation toward another expected event (such as his wife's arrival). Thus, no difference between in-use and not in-use pictures should be observed for imperfective sentences unless the dependent measure taps into the comprehension process during *online* processing of the described event. Because the dependent measure in the first experiment was too late to tap online processing of the sentence, a second experiment used the rebus presentation method. Here, participants read event descriptions in the imperfective and perfective aspect, and the critical instrument word was replaced by a picture of that instrument in use or not in use. Results demonstrated that when representations were assessed during online processing, participants responded to in-use pictures faster than not in-use pictures in both perfective and imperfective sentences. A final control experiment showed that the in-use and not in-use pictures were responded to equally fast in the absence of the perfective and imperfective sentences. The findings from the set of experiments suggest that there are differences not only in content, but also in time course of perceptual simulations of events depending on which verb aspect is used to describe these events.

Acknowledgments

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